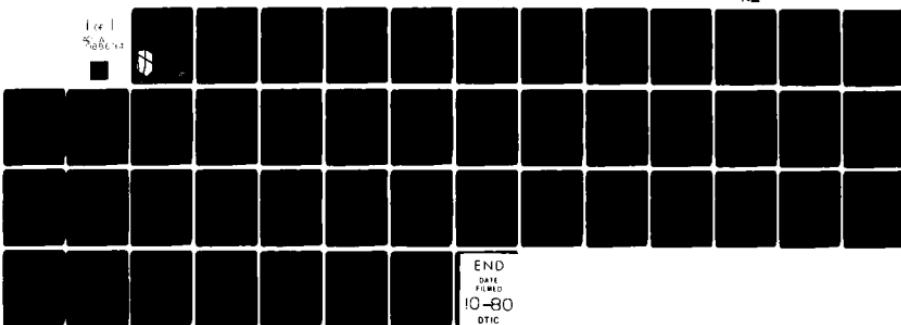
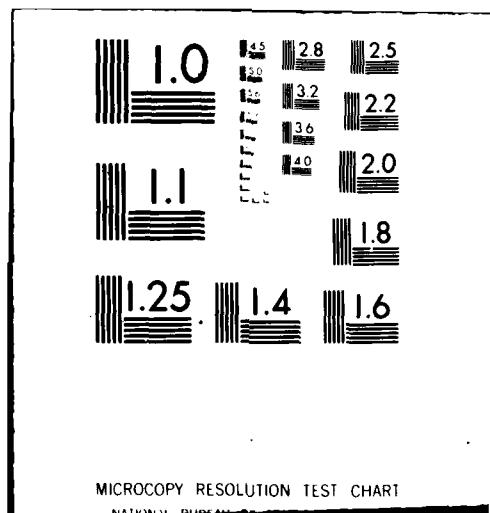


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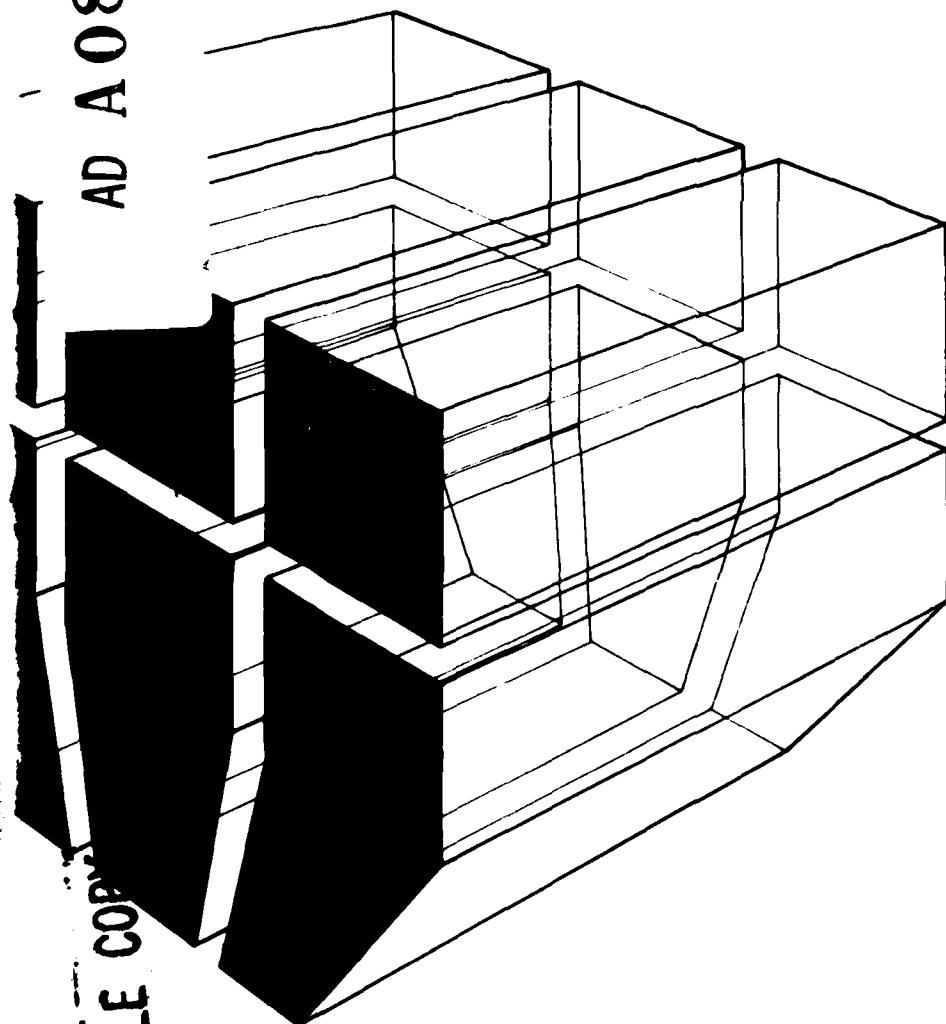
**United States Army
Corps of Engineers**
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...Serving the Nation*

TECHNICAL REPORT P-110
August 1980

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**ZERO BASE BUDGET, CIVIL WORKS OPERATION
AND MAINTENANCE SYSTEM: EXECUTIVE SUMMARY**

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most needed to the least needed, thereby integrating the work increments of a single project with the work increments of other projects. A single listing of all work elements, regardless of project, is developed in priority order; i.e., decision packages (DPs) which describe the work increments are developed and ranked.

This report, in addition to providing a management overview, serves as a guide to the ZBB/CWOM system codes.

[Note: Since the development of the system described herein, the system proponent has made major changes to the system design, has changed the data base manager from SYSTEM 2000 to FOCUS, and has re-installed the system on TYMSHARE's computer. Thus, this report describes the system as it existed when CERL transferred it to the user. It does not describe the Civil Works ZBB/CWOM system as it currently exists.]

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FOREWORD

This study was performed by the U.S. Army Construction Engineering Research Laboratory (CERL) for the Office of the Chief of Engineers (OCE), Directorate of Civil Works, Inter-Agency Order numbers CWO-M-78-2 and CWO-M-77-4.

The technical monitor was Mr. Shigeru Fujiwara, DAEN-CWO-M. The work was prepared under the general supervision of Mr. Edward A. Lotz, Chief, Facilities Systems (FS) Division.

COL Louis J. Circeo is Commander and Director of CERL, and Dr. L. R. Shaffer is Technical Director.

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ZERO BASE BUDGET, CIVIL WORKS OPERATION AND MAINTENANCE SYSTEM: EXECUTIVE SUMMARY

1 INTRODUCTION

Background

By 15 September each year, the Office of the Chief of Engineers (OCE) must forward the Civil Works Operations and Maintenance (O&M) budget for FY+2 to the Office of Management and Budget (OMB). This budget is the vehicle by which OCE defends the total Civil Works O&M program. The budget must reflect the trade-offs associated with eliminating work items in response to a budget cut and with adding work items in a request for a higher funding level. The budget must also reflect the priorities of the individual work items in the budget. The method adopted to achieve these budget features is the Zero Base Budget (ZBB) procedure. In November 1976, the Director of Civil Works requested the U.S. Army Construction Engineering Research Laboratory (CERL) to develop an automated ZBB system.

CERL developed the automated ZBB system in two phases. In phase I, accomplished during FY 77, CERL designed a prototype system in which the Districts and Divisions submitted input data via paper reports to OCE. The data were then input to the computer at the OCE level. In phase II, accomplished during FY78, CERL improved and documented the system, provided the capability for Districts and Divisions to input data directly to the computer, and greatly expanded the "standard reports" capability of the system.

Purpose and Scope

This report provides a management level overview of the Zero Base Budget Civil Works Operations and Maintenance (ZBB/CWOM) system and serves as a guide to the interpretation of the system codes. The report does not present the technical details of the development and maintenance of the ZBB/CWOM data base. It addresses only those aspects of the system that are essential to understanding the system output.

Outline of Report

Chapter 2 of this report presents the ZBB/CWOM system overview, Chapter 3 describes the system input, and Chapter 4 describes the system output. Appendix A contains sample input forms and codes. An annotated bibliography of material available on the ZBB/CWOM system is in Appendix B. Appendix C includes standard format report samples. Instructions for using the "IMMEDIATE ACCESS" feature of the ZBB/CWOM are given in Appendix D.

2 SYSTEM OVERVIEW

General

The ZBB/CWOM system is used as a management tool to develop a funded program which reflects management's objectives. ZBB requires that the work in support of each project be defined in terms of that base effort which is absolutely essential to the accomplishment of the most significant aspects of the project. Those efforts which go beyond this base effort are expressed in logical increments of work. The ZBB technique then develops a prioritization of the incremental work efforts, ranging in importance from most needed to least needed. In doing this, ZBB provides the method of integrating the work increments of a single project with the work increments of other projects such that a single listing of all work elements, regardless of project, is developed in priority order. Thus, there are basically two steps in the accomplishment of ZBB: developing decision packages (DPs) that describe the work increments and ranking these DPs.

Decision Packages

A DP is a logical, concise, systematic description of the scope of discrete element(s) of work. An example DP is shown in Appendix A.

The total work effort for a particular project consists of all DPs that describe each of the work increments comprising that project. For most projects, for example, a single DP will describe the essential "base effort" required. Other DPs will in turn describe the incremental effort required to achieve increasingly higher levels of output from the project.

Ranking

Once DPs have been developed for all projects, they are ranked in order of importance. At each level -- project manager, District, Division, and OCE -- the information in the DP is used to estimate the relative worth of each work element. At each managerial level, the decision packages are then arranged sequentially in order of importance. Since the ZBB/CWOM system machine-produces prioritized lists of DPs, each level of management has a ready means to check that the priorities indicated by its subordinates truly reflect the management objectives it has established.

3 SYSTEM INPUT

Information describing the budget request is input each year at three organizational levels--District, Division, and OCE. This chapter describes the input responsibilities at each level in general terms.

Districts

Thirty-six Districts -- and the New England and Pacific Ocean Divisions -- are responsible for developing the work requirements and funding needs for Civil Works budget requests. Districts within the Lower Mississippi Valley Division (LMVD) must also develop similar data for the O&M, Mississippi River and Tributaries (MR&T) Appropriation. These 38 organizations actually develop the DPs, which are basic building blocks of the ZBB/CWOM system. Each project is assigned a Civil Works Identification System (CWIS) number. A maximum of 50 DPs may be used for each project. Appendix A contains an example DP and descriptions of authorized codes and certain definitions used in the DP.

Each DP within a project is assigned priorities by the project manager. District engineers or their authorized representatives then review the priorities within each project and assign priorities to all DPs across all the projects within their organization. (The maximum rank that a District may assign is "999".) The District program is then submitted to the Division for review and/or integration into the Division program. After the District program is approved by the Division, the District codes the DP data, punches these data onto cards, and inputs the card deck into the ZBB/CWOM system via remote terminal. This is done by May 20 of each year. When notified by the Data Base Administrator (DBA) that its submission is "loaded" into the data base, the District may then request reports that are available from the ZBB/CWOM system. Initially, "bogus" OCE ranks (60,000 to 96,000) are automatically assigned by the computer to each DP, such that each 1,000 increment of OCE ranks is unique to a particular District. "Bogus" Division ranks in the range of 1,000 to 6,000 are also computer generated at this time.

Divisions

Eleven Divisions (including the New England and Pacific Ocean Divisions) review the District O&M budget requests. LMVD reviews requests on both the "General" and "MR&T" programs. When the Division Engineer is satisfied with the program configuration of all subordinate Districts, Division priority is assigned to each DP, and the DPs are integrated into a single Division program, arranged in priority order. These priority assignment cards are input to the ZBB/CWOM system by 15 June of each year. When advised by the DBA that the ranks have been loaded, the Division may use the ZBB/CWOM system to generate Division-level reports. When the actual Division ranks are loaded, second series "bogus" OCE ranks in the range of 30,000 to 52,000 are automatically generated by the computer for each DP by the addition of an appropriate constant to each Division rank.

Office of the Chief of Engineers

In July and August of each year, the Chief, Operations Branch (DAEN-CWO-M), using the "bogus" OCE ranks, generates Division-level statistics to aid in the process of assigning actual OCE priorities to the DPs across all Division programs. The actual OCE rank for every DP is negotiated and assigned. The DBA then loads the actual first pass OCE rank assignments. OCE-level analysis reports are run on the new program configuration. OCE changes the priorities as desired; OCE rank changes are loaded by the DBA. The cycle is repeated until the final program configuration is determined. The system is then used to generate OCE-level through District-level reports to advise the field units of what DPs have been requested for funding. It should be noted that the system is designed to allow only one DBA to actually "write" on the data base; Districts and Divisions do *not* have "write" authority. Districts and Divisions input their data for cataloging only. This catalog file is then used by the DBA to actually load the data into the data base.

4 SYSTEM OUTPUT

Standard-Format Reports

Ten paper format and one tape format reports are computer generated through the Program Language Interface (PLI) capability of System 2000. Specific instructions for generating the reports are contained in the ZBB/CWOM Guidebook (see Appendix B for an annotated bibliography of ZBB-related publications). A brief description of each report is presented below.

Ranking List

This report provides priority and cumulative funding information by decision package. The report may be requested for OCE level, Division level, or District level. (See Appendix C.)

Project List (by District)

This report provides project identification type information by program for each District (and for New England and Pacific Ocean Divisions). Its main use is to help determine if the data on each project have been entered into the data base correctly. The listing for each organization is begun on a new sheet. The report may be requested for OCE level, Division level, or District level. An example is in Appendix C.

Project Data Summary

This report provides a summary by project of all the inputs and outputs of a particular project as defined in all of the DPs included as part of a funded program. An OCE rank is used to describe the lowest priority package considered as part of the program. The project information is always reported at the District level, and the report may be requested for a District or a Division but not for OCE. The pages are reported alphabetically by organization code, then alphabetically by classification code, then numerically by CWIS number. All projects within an organization are reported for each report requested on that particular organization. (See Appendix C for a sample page.)

Feature Costs/Manpower Summary

This report is a program summary, by organization and by each project classification, of cost and manpower information on the DP forms. The information can be requested for a District, for a Division, and for OCE for either program. District-level summaries can be optionally suppressed in a Division-level report; Division and/or District-level summaries can be optionally suppressed in an OCE-level report. (See Appendix C for a sample page of a District-level report.)

DP Descriptor and Numerical Output Measure Summary

This report is a program summary, by organization and by project classification, of certain information presented in the "DP Descriptor" and "Numerical Output" sections of the DP form. The options for requesting the report and for suppressing portions of the report are the same as for the Feature Costs/Manpower Summary. Page format for a District-level report is shown in Appendix C.

Project Total Cost Summary

This report is a summary, by organization and by project classification, of the total costs of each project within a specified fund ceiling. If a District-level report is requested, a listing of projects within the particular District specified is generated. If a Division-level report is requested, a consolidated listing of all projects within that Division is generated. If an OCE-level report is requested, a consolidated listing of all projects within OCE is generated. Each project classification listing and each category total and the program total on the OCE consolidated listing are printed on separate sheets to enable easier processing and analysis by the various OCE staff elements. Division- and District-level reports do not begin different categories on new pages. An example page format for a District-level report is shown in Appendix C.

Decision Package Format

This report prints all DP information stored in the data base for all DPs within specified OCE ranks and within the designated organization. The report may be requested as a District-, Division-, or OCE-level report. One format is shown in Appendix C.

Dredging Requirements Summary

This report summarizes all dredging-related information for all DPs within specified OCE rank boundaries. The report may be requested for a District, Division, or OCE. The format for an OCE-level report is shown in Appendix C.

DP Qualifier and Qualitative Output Listing

This report summarizes all "DP Qualifier" and "Qualitative Output" information in the data base for all DPs within specified OCE rank boundaries. The report may be requested for DPs of a single District, a Division, or OCE. The format for a District-level report is shown in Appendix C.

Project Descriptor Summary

This report summarizes all project descriptor information within a Corps-funded program. The report may be requested for data of a single District, a single Division, or all of OCE. The format for an OCE-level report is shown in Appendix C.

Project Cost by Feature/Subfeature

This output report summarizes, by project, the total feature or sub-feature costs of all Corps projects within a specified funding limit. Total costs for feature or subfeature codes with zero entries are not reported. If subfeature code data are recorded, the parent feature code is not reported. Totals for "Operations" or for "Maintenance" are not reported. Total "Budgetary Authority" is reported for each project under code "TC." "Credits" are reported under code "CR." The data are presented by program; first alphabetically by organization code, then alphabetically by project classification code, then numerically by CWIS number, then numerically by feature code. The format and specifications for this report are described more fully in Appendix C.

Immediate Access Queries

A wide variety of these queries can be made using commands such as "PRINT," "LIST," "TALLY," and the system functions, user-defined functions, and unary, binary, ternary, and boolean operators available in the "Immediate Access Feature" of SYSTEM 2000. A few examples are presented in Appendix D.

SYSTEM 2000 "Report Writer"

This capability can be used to generate "Cumulative Total" reports, but this feature is limited to reporting information elements that lie along a single vertical path of the data base "tree." The data base definition ("tree") for the ZBB/CWOM data base is described in Appendix D.

APPENDIX A: INPUT FORMS AND CODES

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Decision Package, Worksheets	14
Project Class Codes and Project Codes	15
State Codes and Organization Codes	16
Decision Package Types and Project Qualifier	18
Decision Package Qualifiers	19
Qualitative Outputs and Project Descriptors	20
Decision Package Descriptors	21
Numerical Outputs and Supplementary Cost Codes	22

DECISION PACKAGE				OCE USE ONLY
ZBB/CWOM SYSTEM				BY <u>80</u>
1a. CWIS #	2a-f. PROJECT NAME (Max of 48 characters and spaces)			DIV USE ONLY
11550	MISSISSIPPI R. BETWEEN MISSOURI R. AND MN (RID)			
3a. PROJECT CLASS	3b. PROJECT CODE	3c. STATE CODE (One only)	3d. ORGANIZATION CODE	
NL	D	IL	NCR	
4a. DECISION PACKAGE TYPE	4b. DP RANK IN PROJECT	4c. TOTAL DP'S IN PROJECT	4d. DISTRICT RANK	<u>6</u>
B	1	10		
5. PROJECT DESCRIPTION 314 miles of 9 foot commercial navigation channel; 14 locks with 44,000 commercial lockages; annually 25,000,000 tons of commercial traffic; over 20,000 recreational lockages of 46,000 recreational craft; 11 navigation dams; 94,000 acres of land; 26 Public Use areas; 11 small boat harbors & access channels.				
6. FUNCTIONS, THIS DP Base funding necessary for O&M of the project as per guidelines.				
7. FUNDING ARGUMENT Base level funding - Minimum effort level.				
8. ALTERNATIVES: <input checked="" type="checkbox"/> CONTRACTS; <input type="checkbox"/> DELAY 'TIL NEXT FY; <input type="checkbox"/> OTHER (Explain)				
a) \$150 ^K of preventive maintenance.				
9. PROJECT QUALIFIER	CODE	12. PROJECT DESCRIPTORS	AMOUNT (To nearest 0.0)	
a. NAVIGATION-TYPE USE	CR	a. POWER CAPACITY (KILOWATTS)		
b. SPECIAL WORK CODE		b. FLOOD DAMAGES PREVENTED (\$1000)		
c. C&O-PERIODIC INSP. FLAG		c. RECREATION DAYS OF USE (1000 days)	15,000.0	
d. C&O-REPLACE. STUDY FLAG		13. DP DESCRIPTORS	AMOUNT (To nearest 0.0)	
e. C&O-SAFETY STUDY FLAG	Y	e. DOLLARS, THIS DP (\$1000)	6,168.0	
f. C&O-OTHER STUDIES FLAG		b. TOTAL DREDGING (1000 CY)		
11. QUALITATIVE OUTPUTS	CODE	c. AMOUNT OF NEW WORK (\$1000)		
a. VISITOR EXPERIENCE		d. \$ INCR DUE TO W.B. RAISE (\$1000)	106.0	
b. PREVENTIVE MAINTENANCE		e. \$ CHANGE-OTHER CAUSES (\$1000)	500.0	
c. BOUNDARY ENFORCEMENT		f. COST OF MASTER PLANS (\$1000)		
14. NUMERICAL OUTPUTS a. NAV. LOSS PREVENTED (\$1000) b. MAINT. LOSS PREVENTED (\$1000) c. GRF BACKLOG REDUCED (No. permits)				
REFERENCE ER 11-2-101. BUDGETARY INFORMATION IS NOT TO BE RELEASED OUTSIDE DEPT OF ARMY				

TEST FORM, LOCAL REPRODUCTION AUTHORIZED

DECISION PACKAGE		PAGE 3	
ZBBCWOM SYSTEM		(WORKSHEET)	
PROJECT NAME MISSISSIPI R. BETWEEN MISSOURI R. AND MN (C.R.10)		DP RANK IN PROJECT DISTRICT RANK	
15. FEATURE COSTS IN THOUSANDS (To nearest hundred dollars)		CONTRACTS (a)	
		MATERIAL & SUPPLIES (b)	GOVERNMENT (c)
		TOTALS (d)	
1	20 LANDS, DAMAGES	40.5	304.0
21	DAMS	40.5	344.5
22	LOCKS	27.0	258.0
23	POWER PLANT		305.0
24	NATURAL RES. FACILITIES		
25	ROADS, RR. BRIDGES		
26	BREAKWATER, SEAWALLS		
27	LEVEES, FLOODWALLS	30.0	21.0
28	PUMPING PLANTS		72.0
29	RECREATION FACILITIES		123.0
30	PERMANENT OPER. EQUIP.	21.5	264.0
31	BANK STABILIZATION	30.0	285.5
32	BLOWS GROUNDS, UTILITIES	30.0	100.0
33	BLDG'S GROUNDS, UTILITIES	10.0	30.0
33	CHINI & CANAL DREDGING		40.0
33	CHINI & CANAL ALL OTHER		
34	E&O		30.0
35	S&A		30.0
35	SUB TOTAL MAINTENANCE	20.0	300.0
35	GT GRAND TOTAL CRM	163.0	400.0
35	CR CREDITS (NEGATIVE ENTRY)	267.0	1408.0
35	BA BUDGET AUTHORITY REQUEST	267.0	1628.0
16	MANPOWER IN MAN YEARS (To nearest tenth man year)	NON DISTRICT (a)	DISTRICT DIRECT (c)
01	GOVERNMENT PERMANENT	3.0	11.0
02	GOVERNMENT OTHER	1.0	12.0
03	NON GOVERNMENT	8.0	

DECISION PACKAGE		PROJECT NAME M155/SS / PP / R. 867 NW 80 M165/SOUR 1, R. AND MN (R, O)		DP RANK IN PROJECT	DISTRICT RANK
FEATURE COSTS IN THOUSANDS (To nearest hundred thousand)		CONTRACTS (a)	MATERIAL & SUPPLIES (b)	GOVERNMENT (c)	TOTALS (d)
61	LOCKS, DAMS, RESERVOIRS		80.0	2440.0	2520.0
62	SERVICE FACILITIES		2.0	498.0	500.0
63	LEVEE, FLOWWALL, PUMP PLANT				
64	POWER PLANT				
65	NATURAL RESOURCE MGMT		10.5	10.5	
66	RECREATION MANAGEMENT	100.0		64.5	164.5
67	CONDITION & OPERN STUDIES			130.0	130.0
68	REMOVE SUNK VSL & OSRA'S				
69	WATER CONTROL MANAGEMENT			55.0	55.0
10	INSPECTION & REPORTS	100.0		203.0	303.0
11	SURVEY NORTH CENTRAL LAKES				
14	PREPVENT OSRA DEPOSITS				
15	GEN REG SECTION 5 & 10				
15	61 GEN REG SECTION 4B2				
15	62 GEN REG SECTION 103				
15	64 GEN REG SECTION 4B4				
15	65 GEN REG OTHER REG FUNCTIONS				
15	66 GEN REG NEPA				
15	67 GEN REG ENFORCE, LIT SURV.				
15	68 GEN REG NAVIG STUDIES				
15	69 GEN REG PUBLIC HEARINGS				
15	70 GEN REG MISCELLANEOUS				
16	81 LAW ENFORCE CONTRACT ONLY				
16	82 \$84 FOR LAW ENFORCE ONLY				
19	\$84 ALL, EXCEPT LAW ENFORCE			20.0	857.0
19	ST SUB TOTAL OPERATIONS	200.0	102.0	4238.0	4540.0

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PROJECT CLASS CODES
(DP Block 3a)

<u>Category</u>	<u>Classification</u>	<u>Code</u>
Flood Control	Channel Improvements, Inspections and Miscellaneous Maintenance	FC
	Inspection of Completed Works	FI
	Reservoirs	FR
	Scheduling Reservoir Operations	FS
Multi-Purpose	Multiple Purpose Including Power	MP
Navigation	Channels and Harbors-Regular	NC
	Channels and Harbors-Diked Disposal	ND
	Locks and Dams	NL
Protection of Navigation	Removal of Aquatic Growth	PA
	Protect, Clear and Straighten Channels	PC
	Prevention of Obstruction Deposits	PD
	General Regulatory Functions	PG
	Surveillance of Northern Boundary Waters	PN
	Project Condition Surveys	PS
	Drift Removal	PR
	Removal of Sunken Vessels and Obstructions	PV

PROJECT CODES
(DP Block 3b)

<u>Code</u>	<u>Description</u>
A	New project to be activated in Budget Year (BY)
B	Existing project with scope increase in BY
C	Existing project with periodic maintenance in BY
D	Existing project with continuing maintenance

STATE CODES
(DP Block 3c)

<u>Code</u>	<u>State</u>	<u>Code</u>	<u>State</u>
AL	ALABAMA	NE	NEBRASKA
AK	ALASKA	NV	NEVADA
AZ	ARIZONA	NH	NEW HAMPSHIRE
AR	ARKANSAS	NJ	NEW JERSEY
CA	CALIFORNIA	NM	NEW MEXICO
CO	COLORADO	NY	NEW YORK
CT	CONNECTICUT	NC	NORTH CAROLINA
DE	DELAWARE	ND	NORTH DAKOTA
DC	DIST. OF COL.	OH	OHIO
FL	FLORIDA	OK	OKLAHOMA
GA	GEORGIA	OR	OREGON
HI	HAWAII	PA	PENNSYLVANIA
ID	IDAHO	RI	RHODE ISLAND
IL	ILLINOIS	SC	SOUTH CAROLINA
IN	INDIANA	SD	SOUTH DAKOTA
IA	IOWA	TN	TENNESSEE
KS	KANSAS	TX	TEXAS
KY	KENTUCKY	UT	UTAH
LA	LOUISIANA	VT	VERMONT
ME	MAINE	VA	VIRGINIA
MD	MARYLAND	WA	WASHINGTON
MA	MASSACHUSETTS	WV	WEST VIRGINIA
MI	MICHIGAN	WI	WISCONSIN
MN	MINNESOTA	WY	WYOMING
MS	MISSISSIPPI	GU	GUAM
MO	MISSOURI	PR	PUERTO RICO
MT	MONTANA	VI	VIRGIN ISLANDS

ORGANIZATION CODES
(DP Block 3d)

<u>Code</u>	<u>District/Division</u>	<u>Code</u>	<u>District/Division</u>
LMK	Vicksburg	NPW	Walla Walla
LMM	Memphis	ORH	Huntington
LMN	New Orleans	ORL	Louisville
LMS	St Louis	ORN	Nashville
MRK	Kansas City	ORP	Pittsburgh
MRO	Omaha	POD	Pacific Ocean (Div)
NAB	Baltimore	SAC	Charleston
NAN	New York	SAJ	Jacksonville
NAO	Norfolk	SAM	Mobile
NAP	Philadelphia	SAS	Savannah
NED	New England (Div)	SAW	Wilmington
NCB	Buffalo	SPK	Sacramento
NCC	Chicago	SPL	Los Angeles

<u>Code</u>	<u>District/Division</u>	<u>Code</u>	<u>District/Division</u>
NCE	Detroit	SPN	San Francisco
NCR	Rock Island	SWA	Albuquerque
NCS	St. Paul	SWF	Fort Worth
NPA	Alaska	SWG	Galveston
NPP	Portland	SWL	Little Rock
NPS	Seattle	SWT	Tulsa

DECISION PACKAGE TYPES
(DP Block 4a)

<u>Code</u>	<u>Description</u>
B	Base Decision Package - describes the minimum level of effort required to provide only the most essential project purposes.
M	Manpower Incremental Decision Package - describes <u>only</u> a change in <u>method</u> of performing an increment of work already described in a DP of higher priority.
W	Work Incremental Decision Package - describes work required that does not qualify for inclusion as part of the base effort.

PROJECT QUALIFIER
(DP Block 9)

<u>Code</u>	<u>Description</u>
CR	Project is used primarily by commercial traffic.
RC	Project is used primarily by recreational traffic, but there is also some commercial use.
RR	Project essentially supports only recreational traffic.
XX	Economic worth of maintaining the project is questionable.

DECISION PACKAGE QUALIFIERS
(DP Block 10)

<u>Qualifier</u>	<u>Code</u>	<u>Significance</u>
Type Dredge	HS	Corps hopper dredge, small class
	HM	Corps hopper dredge, medium class
	HL	Corps hopper dredge, large class
	SC	Corps side caster dredge
	AL	All other Corps dredge types
	CH	Contract hopper dredges
	CA	All other contract dredges
Special Work	DR	Dredging Requirements
	GR	Great River Environmental Action Team Work
	LE	Law Enforcement Requirements
	VC	Development of a Visitor Center
	EC	Energy Conservation Requirements
	PA	Pollution Abatement Requirements
	OS	OSHA Requirements
Periodic Inspection Flag	Y	Used on DPs which specifically provide for a "condition and operation" (C&O) periodic inspection
Replacement Study Flag	Y	Used on DPs which specifically provide for a "C&O" replacement study.
Safety Study Flag	Y	Used on DPs which specifically provide for a "C&O" safety and adequacy study.
Other Studies Flag	Y	Used on DPs which specifically provide for a "C&O" study other than those above.

QUALITATIVE OUTPUTS
(DP Block 11)

<u>Code</u>	<u>Level of Significance</u>
C	Critical function
I	Important function
S	Significant function
R	Regular function

PROJECT DESCRIPTORS
(DP Block 12)

<u>Descriptor</u>	<u>Significance</u>
Power Capacity	Name-plate power capacity rating of the project effective during the budget year.
Flood Damages Prevented	Most currently reported (or estimated) real value of <u>average annual</u> flood damages actually prevented by the project over the operational life of the project.
Recreation Days of Use	Most current computation (or estimate) of the annual recreation days of use provided by the project.

**DECISION PACKAGE DESCRIPTORS
(DP Block 13)**

<u>Descriptor</u>	<u>Significance</u>
Dollars, This DP	Total "Budget Authority Request" needed to accomplish the functions
Total Dredging	Total volume of dredge material to be removed from the project as a result of the work proposed in the DP.
Amount of New Work	Price of work in the DP that is budgeted for the first time and which will be a repetitive requirement over the life of the project.
\$ Increase Due To Wage Board Raise	That amount of the wage board labor cost of the DP function that is attributable to wage board pay increases over the salary used for the previous budget year.
\$ Change -- Other Causes	That amount of the DP function cost, other than wage board labor cost, that is attributable to inflation over the previous budget year's cost base.
Cost of Master Plans	That amount of the DP function cost that is attributable to the development of Master Plans, not including S&A costs.

NUMERICAL OUTPUTS
(DP Block 14)

<u>Output</u>	<u>Significance</u>
Navigation Loss Prevented	Value of the navigation loss prevented by reducing the need to "light load," or by reducing queueing delays at locks, or by otherwise increasing the operational efficiency of the system.
Maintenance Loss Prevented	Estimated dollar <u>increase</u> in the "real" cost of providing the maintenance function if the function is delayed for 1 year.
GRF Backlog Reduced	Number of permits by which the permit backlog will be reduced if the DP is funded.

SUPPLEMENTARY COST CODES
(DP Block 15)

<u>Code</u>	<u>Item</u>	<u>Definition</u>
19ST	SUB-TOTAL, OPERATIONS	Sum of all items with "Operations" Codes
35ST	SUB-TOTAL, MAINTENANCE	Sum of all items with "Maintenance" Codes
35GT	GRAND TOTAL, O&M	Sum of amounts in cost codes "19ST" and "35ST"
35CR	CREDITS	Any monies credited to projects which defray the cost of operating or maintaining that project
35BA	BUDGET AUTHORITY REQUEST	Amounts in cost code "35GT" reduced by the amounts in cost account "35CR"

APPENDIX B: ANNOTATED BIBLIOGRAPHY

The following documents describe various aspects of the ZBB/CWOM system:

1. *Zero Base Budget, Civil Works Operation and Maintenance System Guide Book.* This guidebook provides detailed instructions on how and when the budget data are to be developed, reported, coded, and input into the ZBB/CWOM system. It also describes how to access the system's "Standard Format" reporting capability and the "Immediate Access" capability (direct query of the data base). The guidebook, now in draft form, will be published as an Engineer Pamphlet before January 1979.
2. *Zero Base Budgeting System Maintenance Manual.* This is a maintenance manual for the use of the "Assigned Responsible Agency" (the Engineering Data Processing Center [EDPC]) and for the DBA (in the Operations Branch, Construction-Operations Division of OCE (DAEN-CWO-M)). The manual details the structure of the system, the file layouts, descriptions, and access routines, and the detailed procedures for modifying the data base and creating and modifying programs. A reference copy is available at the OCE Engineer Information and Data Systems Office (DAEN-DS).
3. *ZBB/CWOM System Overview.* A revised version of this document was published on 25 July 1978. The document explains how the system evolved and presents the economic justification for it. A reference copy is available at DAEN-DS.
4. *ZBB/CWOM System Source Code and Update Library.* This is a computer printout of the system source code and update library, the compiler listing for every program, the BEGIN/REVERT control card procedures, and sample system input and output. The only copy is at Engineer Data Processing Center (EDPC).
5. *SYSTEM 2000 Reference Manual.* This manual is published by MRI Systems Corporation, which developed the "SYSTEM 2000" Data Base Manager used in the ZBB/CWOM system. The "Immediate Access Feature" chapter of the manual is of interest to those who desire to make direct queries of the data base. The referenced chapter provides detailed instructions and examples of how to use each of the direct query capabilities of SYSTEM 2000. Pertinent parts of the "Immediate Access Feature" chapter have been provided to all Division offices using the ZBB/CWOM system and to the DBA. Additional copies must be ordered from MRI Systems Corporation, P.O. Box 9968, Austin, TX 78766. (When ordering copies of this chapter, one should also specifically request a copy of the "Portfolio Foldout," which is a description of the sample data base used in the practical examples of the chapter, and which is necessary to understand the examples.)
6. *Computer Center Reference Manual.* This manual is published by the Naval Ship Research and Development Center (NSRDC), in Carderock, MD. It is an introductory manual on the use of the NSRDC 6600/6700 CDC computers on which the ZBB/CWOM system is installed.

APPENDIX C: STANDARD FORMAT REPORTS

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PROGRAM: GENERAL
ORGANIZATION: GCF

OCE RANKING LIST

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CIV ELEM	CIV RANK	DIST RANK	PROJ CLASS	PROJ CYS#	PROJECT_NAME	PKG TYPE	PKG AMOUNT \$1000	CUM OCF AMOUNT \$1000	CUM DIV AMOUNT \$1000
R8114	5114	114	SPK	NC	SACRAMENTO RIVER		200.0	869805	916.0
R8114	5116	116	SPK	FR	MERCED COUNTY STREAM GROUP		50.0	859955	915.0
E8114	5118	118	SPK	FR	BLACK BUTTE LAKE		45.0	860000	920.0
R8120	5120	120	SPK	FR	04250 ISARILLA LAKE		45.0	860045	924.0
B8122	5122	122	SPK	FR	10750 MARTIS CREEK LAKE		15.0	860060	926.0
R8124	5124	124	SPK	FR	12190 NEW HOGAN LAKE		25.0	860085	928.0
R8126	5126	126	SPK	FR	PINE FLAT LAKE		65.0	861150	931.0
R8128	5128	128	SPK	FR	SUCCESS LAKE		25.0	861175	937.0
A8130	5130	130	SPK	FR	17480 TERMINUS DAM-LAKE KANEAH		20.0	861195	939.0
A8132	5132	132	SPK	FR	01590 BLACK BUTTE LAKE		50.0	860245	944.0
A8134	5134	134	SPK	FR	12190 NEW MOGAN LAKE		375.0	860520	982.0
R8136	5136	136	SPK	FR	PINE FLAT LAKE		120.0	860740	991.0
R8138	5138	138	SPK	FR	08250 ISARILLA LAKE		275.0	861115	1031.0
R8140	5140	140	SPK	FR	17480 SUCCESS LAKE		250.0	861365	1056.0
A8001	6001	1	SPL	FR	09190 LOS ANGELES COUNTY DRAINAGE AREA %CB004*		80.0	862245	1146.0
A9002	6002	2	SPL	FR	16290 SANTA ANA RIVER BASIN %CB005*		60.0	862851	1205.0
A9003	6003	3	SPL	FR	04030 PAINTED ROCK DAM %CB001*		15.0	863005	1226.0
F9004	6004	4	SPL	FR	00190 ALAMO DAM %CB006*		174.0	863179	1230.0
R9005	6005	5	SPL	FR	60130 MOJAVE RIVER DAM %CR004*		8.0	863216	1241.0
R9006	6006	6	SPL	FR	14090 PINE • MATHEWS CANYONS LAKE %CB003*		37.0	863242	1245.0
R9007	6007	7	SPL	FR	19880 WHITLOW RANCH DAM %CB002*		8.0	863271	1247.0
R9008	6008	8	SPL	FI	08180 INSPECTION OF COMPLETED WORKS %CR301*		120.0	863394	1255.0
R9009	6009	9	SPL	PS	14600 PROJECT CONDITION SURVEYS %CA0601*		75.0	863469	1267.0
R9010	6010	10	SPL	NC	15730 SANTA BARBARA HARBOR %CA002*		6.0	863664	1280.0
F9011	6011	11	SPL	NC	26190 VENTURA MARINA %CA009*		65.0	864519	1372.0
F9012	6012	12	SPL	NC	13080 OCEANSIDE HARBOR %CA005*		40.0	864919	1412.0
A9013	6013	13	SPL	NC	14260 CHANNEL ISLANDS HARBOR %CA003*		65.0	865569	1477.0
A9014	6014	14	SPL	NC	76101 LA-LB MODEL %CA016*		75.0	865564	1484.0
A9015	6015	15	SPL	FS	16530 SCHEDULING RESERVOIR OPERATIONS %CB007*		4.0	865648	1484.0
F9016	6016	16	SPL	FR	09190 LOS ANGELES COUNTY DRAINAGE AREA %CR004*		649.0	866297	1544.0
F9017	6017	17	SPL	FR	16290 SANTA ANA RIVER BASIN %CB005*		166.0	866462	1566.0
A9018	6018	18	SPL	FR	13560 PAINTED ROCK DAM %CR001*		93.0	866555	1575.0
A9019	6019	19	SPL	FR	00190 ALAMO DAM %CB006*		38.0	866593	1579.0
F9020	6020	20	SPL	FR	60110 MOJAVE RIVER DAM %CR008*		36.0	866629	1583.0
A9021	6021	21	SPL	FR	14090 PINE • MATHEWS CANYONS LAKE %CB003*		15.0	866644	1584.0
A9022	6022	22	SPL	FR	19880 WHITLOW RANCH DAM %CB002*		20.0	866664	1585.0
A9023	6023	23	SPL	FI	08180 INSPECTION OF COMPLETED WORKS %CA301*		35.0	866690	1590.0
A9024	6024	24	SPL	PS	14600 PROJECT CONDITION SURVEYS %CA0601*		25.0	866724	1595.0
A9025	6025	25	SPL	NC	24190 VENTURA MARINA %CA009*		1350.0	868074	1727.0
A9026	6026	26	SPL	NC	13080 OCEANSIDE HARBOR %CA005*		200.0	868274	1747.0
F9027	6027	27	SPL	FR	09190 LOS ANGELES COUNTY DRAINAGE AREA %CR004*		46.0	868714	1793.0
A9028	6028	28	SPL	FR	16290 SANTA ANA RIVER BASIN %CB005*		20.0	869036	1823.0
A9029	6029	29	SPL	FR	13560 PAINTED ROCK DAM %CR001*		30.0	869064	1826.0
A9030	6030	30	SPL	FI	08180 INSPECTION OF COMPLETED WORKS %CA301*		100.0	869164	1836.0
A9031	6031	31	SPL	FR	60110 MOJAVE RIVER DAM %CP004*		20.0	869184	1836.0
A9032	6032	32	SPL	NC	76101 LA-LB MODEL %CA016*		26.0	869544	1874.0
A9033	6033	33	SPL	FR	60130 MOJAVE RIVER DAM %CB004*		160.0	869844	1904.0

PROJECT LIST (BY DISTRICT)

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ORGANIZATION	LOCATION	CLASS	DESCRIPTION	NAME	PROJ.	STATE	POWER CAPACITY - KILOWATTS	AV. ANNUAL FLD DEMAND FOR FFC - DAYS OF USE IN 1000-DAYS
				NAME	EXIS.			
FC	17-10	CITY	CHIANTI RIVER		?	D	VA	32.0
FC	17-20		TEFLA-AUVALUP RIVER TRAFFIC		?	D	WA	0.0
FI	0-100		RELOCATION OF COMPLETED WORKS		?	D	WA	
FO	07700		GRANT, A. HANSON RIVER		?	D	WA	4685.0
FO	11440		SHIN-WEIN-TAH, NEW		?	D	WA	1630.0
FO	67727		YANGCAE LAKE		?	D	WA	40.0
FS	16700		SCAFDING PESPOVO OPERATIONS		?	D	WA	58.0
FB	37200		ELLEN FALLS RIVER		?	D	WA	21.1
FB	64200		CHIEF JINKEP RIVER, CHIUNATA RIVER, wa		5	H	WA	42000.0
FB	47442		FLY RIVER		4	H	WT	42000.0
FC	01110		SELTZERMAN HARBOUR		?	C	WA	100.0
FC	64770		SEKYE RIVER & CASHELIS RIVER		?	D	WA	42000.0
FC	13670		SHERFT SPRINGS & TWIN-STORY WATERS		?	D	WA	42000.0
FC	14720		SUTLILITTE RIVER		3	D	WA	
FC	17670		SWAN RIVER (SWANFL)		2	D	WA	
FC	14650		TILLOKA RIVER AND MARSH & NASELLE RIVER		?	C	WA	
FC	67212		PAW RIVER		?	C	WA	
FC	67314		SEATTLE MARSH		2	D	WA	
FC	70742		SPOTT WATERS		1	A	WA	
FI	09400		TAKE MUNITION, SENO CANAL		5	D	WA	957.0
FO	12600		SUBJECT Condition Survey		1	A	WA	

PROGRAM: GENERAL
 PROJECT CLASS: F2
 STATE CODE: TX
 PROJECT CODE: D
 PROJECT CADS #: 1226n

PROJECT DATA SUMMARY REPORT

19 MAY 78

THRU OFF RANK: 9999

ORGANIZATION: SUR - FRONT WORTH

CODE	FEATURE & COSTS (\$1000)	CONTRACTS	MIL-A-SPLY	GOVERNMENT	TOTALS
01	LANDS, DAMS, RESERVOIRS	20.0	7.0	23.0	50.0
02	SERVICE FACILITIES	52.0	8.0	60.0	
03	LEVEE-FLOODALL-PUMP PLANT				
04	PUMP PLANT				
05	NATURAL RESOURCE MGMT	20.0	4.0	5.0	29.0
06	REFORESTATION MANAGEMENT	66.2	112.0	119.8	298.0
07	CONDITION/OPERATOR STUDIES	20.0	0.8	18.2	39.6
08	QUEMADAS SURV VULNERABILITY				
09	WATER CONTROL MANAGEMENT	26.0	2.0	43.3	71.3
10	INSPECTION & REPORTS				
11	SURVEY NO. CEPAL LAKES				
12	PREFECT CASTR DEPOSITS				
13	GEN PEG-SECTIONS 9 & 10				
1501	GEN REG-SECTION 402				
1502	GEN REG-SECTION 103				
1503	GEN REG-SECTION 404				
1504	GEN REG-OTHER REG FUNCT				
1505	GEN REG-HEPA				
1506	GEN REG-ENVOR.LIT.SURVL				
1507	GEN REG-ENVOR.LIT.SURVL				
1508	GEN REG-MISCELLANEOUS				
1509	GEN REG-MISCELLANEOUS				
1510	GEN REG-MISCELLANEOUS				
1501	LAW ENFORCE-CONTACT ONLY				
1602	SRA-FOR LAW ENFORCE ONLY				
19	SRA-FOR ETC LAW ENFORCE				
1957	SRA-FOR ETC LAW ENFORCE				
20	LANDS, DAMAGES	152.2	177.8	284.5	614.5
21	DAMAGES	76.4			
22	LOCKS				
23	PUMP PLANT				
24	NATURAL RES. FACILITIES				
25	ARCADS, DR. BRIDGES	255.0			
26	BREAKWATER, SEAWALLS				
27	LEVEES, FLOODWALLS				
28	DRIMPING PLANTS				
29	REFORESTATION ACTIVITIES	25.0	6.0	3.0	34.2
30	PERMANENT OPER. EQUIP.				
31	BAKU STABILIZATION				
32	LOGOS/GROUNDS, UTILITIES				
3301	Canal & Canal - DREDGING				
3302	Canal & Canal - ALL OTHER				
34	ERD				
35A	SRA				
3557	SUB-TOTAL MAINTENANCE	364.6	79.3	61.6	505.5
3567	GEN-D TOTAL, RIM	516.8	257.1	346.1	1120.0
35C2	CREDIT				
3594	BUDGET AUTHORITY REQUEST	516.9	257.1	346.1	1120.0
CODE	MAINTENANCE, LAND, MACHINERY, ETC.				
C1	GOVERNMENT, GOVERNMENT	1.1	DISTRICT DIRECT	1.7	17.5
C2	GOVERNMENT, OTHER	1.1	DISTRICT	1.7	17.5
C3	NON-GOVERNMENT	1.2	DISTRICT	1.7	17.5

PROJECT DESCRIPTION	AMOUNT
POWER CAPACITY (KILOWATTS)	1533.0
FLOOD DAMAGES PREVENTED (\$1000)	1038.0
RECREATION DAY OF USE (\$1000)	
PROJECT DESCRIPTION	AMOUNT
POWER CAPACITY (KILOWATTS)	5.0
FLOOD DAMAGES PREVENTED (\$1000)	37.7
RECREATION DAY OF USE (\$1000)	106.1
PROJECT DESCRIPTION	AMOUNT
TOTAL OPERATING (\$1000 CY)	8.0
AMOUNT OF NEW WORK (\$1000 CY)	
SINGER DUE TO W.R. RAISE (\$1000)	
CHANGE-OTHER CAUSES (\$1000)	
COST OF MASTER PLANS (\$1000)	
PROJECT DESCRIPTION	AMOUNT
NAV. LOSS PREVENTION (\$1000)	
Maint. Loss PREVENTION (\$1000)	
GRF. BACKLOG REDUCED (NO. OF PERmits)	45.4

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ESTIMATED COST/ANNUAL STIMSON H. PLANT

CODE	DESCRIPTION	CONTRACTS	W.H.-SUPPLY	GOVERNMENT	TOTAL
01	LINES, DRAWS, PUFFERS	127.2	115.6	1321.7	1347.7
02	SERVICE FACILITIES			660.6	1103.4
03	LEVEE, FLUWL, DUMP PLANT			3.0	3.0
04	ENFOR PLANT			1150.9	1232.9
05	NATURAL RESOURCE Mgmt	103.0	92.0	14.0	346.3
06	REFUGATION, MANAGEMENT	105.0	39.0	321.1	465.1
07	CONDITIONER, STIMSON	109.0	10.0	656.2	865.2
08	REMOVE SWW VSL, STREAMS				
09	WATER CONTROL MANAGEMENT	127.3	34.0	1265.2	1426.5
10	INSPECTION & REPORTS	25.0	129.0	441.0	615.0
11	SURVEY IN, COASTAL LAKES				
12	POLYMER, OCEAN DEPOSITS				
13	GENERAL HEC FUNCTIONS				
1401	LAW ENFORC-E CONTACT ONLY				
1402	STAF FOR LAW ENFOR ONLY				
1403	STAF-ALL EXC LAW ENFOR				
1451	SHI-OTTL. OPERATIONS	606.5	451.6	7540.7	8301.2
20	LEADS, RAVAGES				
21	DRAGS	66.0	80.6	44.5	49.5
22	LEVEES	7.0	20.0	271.0	415.6
23	PLANT	275.0	245.0	1232.0	1752.0
24	NATIONAL WSC. FACILITIES	31.0	30.0	5.5	68.5
25	POLES, DR. BRIDGES	42.5	250.0	16.4	55.9
26	AERATED, SEAWALLS	250.0	10.0	70.0	260.0
27	LEVEES, F. AND WALLS	18.0	9.0	12.0	59.0
28	WILDLIFE PLATS				
29	OPERATION FACILITIES	6.0			
30	PRODUCTION OFW. EQUIP.	10.0	50.0	107.6	167.6
31	AND STABILIZATION				
32	WATER, GROUND UTILITIES	471.0	40.0	410.8	921.8
3301	Canal - DREDGING	3150.0	997.0	550.0	4417.0
3302	Canal & Canal - ALL OTHER	335.0	292.0	473.0	1100.0
34	FIR	55.0	32.0	370.4	457.4
35	SEA	3.0	6.0	916.4	925.4
3651	SHI-TOTAL MAINTENANCE	7048.5	1715.6	4581.1	13345.2
3652	COND-TOTAL & NW	7735.0	2167.2	12130.8	22033.0
3653	Constr				
3654	RIGHT OFWAY & JUNGLE	7735.0	2167.2	12130.8	22033.0
CODE	MANUFACTURERS (IN MANUFACTURER'S)	NON-	DISTRICT	DISTRICT	
01	GVERNMENT, GOVERNMENT	31.2	63.4	322.3	
02	GOVERNMENT, OTHER	6.0	4.3	27.8	
03	GOVERNMENT	46.1			

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PROJECT TOTAL COST SUMMARY					14 JUL 78	17:15
PROGRAM:	GENERAL					
ORGANIZATION:	NPS - SPATIUM					
CCF SOURCE:	46000 - 42000					
PROJECT CLASS	STATE	CITY	SUBJECT CLASS	AMOUNT	ITEM	DESC
FC	WA	17-10	STILLWATER AREA	\$ 50	NPS	
FC	WA	17920	TACOMA-PYALLUP FLOOR CONTROL	\$ 45	NPS	
FR			CLASSIFICATION TOTAL \$ 95			
FI	WA	01000	INSPECTION OF COMPLETED WORKS	\$ 40	NPS	
FI			CLASSIFICATION TOTAL \$ 40			
FD	WA	07700	MANAG. A. HANSON DAM	\$ 480	NPS	
FD	WA	11590	MID MOUNTAIN DAM	\$ 945	NPS	
FD	WA	67327	YACOCHEF LAKE	\$ 669	NPS	
FP			CLASSIFICATION TOTAL \$ 2003			
FS	WA	16530	SCENIC DRIVING OPERATIONS	\$ 101	NPS	
FS			CLASSIFICATION TOTAL \$ 101			
F			CATEGORY TOTAL \$ 2230			
WD	IN	00200	ALBEN FALLS DAM	\$ 1555	NPS	
WD	VT	67352	LIPPIY DAM	\$ 2160	NPS	
WD	WA	01200	THIFF JOSEPH DAM. COLUMBIA RIVER. WA	\$ 3593	NPS	
WD			CLASSIFICATION TOTAL \$ 7317			
W			CATEGORY TOTAL \$ 7317			
WC	WA	01210	BELLEVUE HAYDOW	\$ 440	NPS	
WC	WA	01770	DAY'S HAYDOW & CHEHALIS RIVER	\$ 430	NPS	
WC	WA	13970	PIRFT SOUTN & TRIPARTY CTERS	\$ 1055	NPS	
WC	WA	14740	GUILLAVATE RIVER	\$ 1574	NPS	
WC	WA	17-74	SW IN OLYMPIC MOUNTAINS	\$ 235	NPS	
WC	WA	16541	WILSON LIVFDR 4TH HAYDOW & NACELLF RIVER	\$ 111	NPS	
WC	WA	67310	NFA-HAY	\$ 160	NPS	
WC	WA	67314	SEATTLE HAYDOW	\$ 255	NPS	
WC	WA	72704	FINZ WORK	\$ 25	NPS	
WC			CLASSIFICATION TOTAL \$ 945			
WL	WA	64400	LAK. WASHINGTON SHO RANCH	\$ 2627	NPS	
WL			CLASSIFICATION TOTAL \$ 2627			
W			CATEGORY TOTAL \$ 12312			
WC	WA	16500	PROJECT CONDITION SURVEYS	\$ 165	NPS	
WC			CLASSIFICATION TOTAL \$ 165			
			CATEGORY TOTAL \$ 165			
			PROGRAM TOTAL \$ 22033			

DECISION PACKAGE FORMAT		
DECISION PACKAGE TYPE:	W	19 MAY 78
DP RANK WITHIN PROJECT:	11	
TOTAL RPS IN PROJECT:	13	
PROJECT NAME:	NAVARRO MILLS LAKE	
CONTRACTOR:	CONTRACIS MILLSPLY GOVERNMENT	PROJECT QUALITIES
CONTRACTOR CLASS:	GENERAL CONTRACTORS	NAVIGATION-TYPE ISF
STATE CODE:	TX	CODE
PROJECT CODE:	12200	
CODE	ESTIMATE & COSTS	CODE
ALL	LAKES, RIVERS, SEAWATERS	
02	SERVICE FACILITIES	
03	POWER PLANT	
04	NATURAL RESOURCE MGMT	
05	REFURBITION MANAGEMENT	
06	CONDITION REPORT STUDIES	
07	RENEWABLE ENERGY SOURCES	
08	WATER CONTROL MANAGEMENT	
09	INSPECTION & REPORTS	
10	SURVEY '80. CENTRAL LAKES	
11	PREDICT OASTA DEPOSITS	
12	GPN REG-SECTIONS 9 & 10	
1502	GPN REG-SECTION 102	
1503	GPN REG-SECTION 103	
1504	GPN REG-SECTION 104	
1505	GPN REG-SECTION 105	
1506	GPN REG-SECTION 106	
1507	GPN REG-SECTION 107	
1508	GPN REG-SECTION 108	
1509	GPN REG-SECTION 109	
1510	GPN REG-SECTION 110	
1511	LAW ENFORCE-CONTACT ONLY	
1502	SEA-FOR LIAISON FORCE ONLY	
1512	SIDE-ALL FLC LAW FORCE	
1513	SIDE-TOTL. OPERATIONS	
20	LAKES, RIVERS, SEAWATERS	PROJECT DESCRIPTIONS
21	DAWS	AMOUNT
22	LOCKS	POWFR CAPACITY (KWH/HR)
23	POWER PLANT	FLDN DAMAGES PREVENTED (\$1000)
24	NATURAL RES. FACILITIES	RECREATION DAY OF USE (\$1000 DAYS)
25	WATERS. PRO. FOR OPS	
26	REFURBISHED. SPECIALS	
27	LYFES. FLONICALLS	
28	PLANTING PLANTS	
29	REFURBITION FACILITIES	
30	PERMANENT OPER. EQUIP.	
31	HAB. STABILIZATION	
32	REFURBISH. FACILITIES	
3301	Canal & Canal - Crossings	
3302	Canal & Canal - Ill. Other	
34	Canal	
35	SEA	
3501	SIDE-TOTL. MAINTENANCE	
3502	Grand-Totl. New	
3503	OPORTS	
3504	BUDGET AUT-11- REQUEST	
CODE	MISCELLANEOUS	
01	GOVERNMENT. GOVERNMENT	
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WATER-SOL:		GENERAL	
CARBONATATION: NCF		NCF SCALES:	
NCF SCALES:		3000 T	
TYPE	DESIGN	CLASSES	VOLUME LOCATIONS
HS	H2P2O5	1	
HW	=27n-1	4	
HL	951C-0		
CC	1212-0		
AL	9469-0	1	
CW	4545-0		
CA	1211217-4	13	
TOTAL	=6675-4	23	

MULTI-PURPOSE CATEGORY (INCL PHNUK)		VALUUE 1000 CY	UNIT TONS	UNIT TONS	UNIT TONS
CUST			1000.0	1000.0	1000.0
			1000.0	1000.0	1000.0
			1000.0	1000.0	1000.0

NOTE: WANDER'S ADJUSTMENT PACKAGE INFORMATION IS NOT ADDRESSED AT THIS REPORT.

PROGRAM: GENERAL
 ORGANIZATION: SWF - FORT WORTH
 OCE RANKS: 0 THRU 99999

DP QUALITATIVE OUTPUT LISTING

19 MAY 78

OCE	OCE	PROJECT NAME	DECISION QUALIFIERS					QUALITATIVE OUTPUTS		
			DP AMOUNT	DP \$1000	A	B	C	D	E	F
92051	SWF	WHITEY LAKE	60.0	60.0						
92052		SAW RAYBURN DAM AND RESRVOIR	17.0	17.0						
92053		LAVON LAKE								
92054		WACO LAKE								
92055		STILLHOUSE HOLLOW LAKE								
92056		RELTION LAKE								
92057		SOMERVILLE LAKE								
92058		PROCTOR LAKE								
92059		CANYON LAKE								
92060		MORNS CREEK LAKE								
92061		GRANGE LAKE								
92162		NORTH FORK LAKE								
92063		INSPECTION OF COMPLETED WORKS								
92064		SCHEDULED RESERVOIR OPERATIONS								
92065		WHITEY LAKE								
92066		SAW RAYBURN DAM AND RESRVOIR								
92067		TOWN BLUFF DAM AND B A STEINHAGEN LAKE, TEXAS								
92068		LEWISVILLE LAKE								
92070		LEWISVILLE LAKE								
92071		REFROOK LAKE								
92072		WACO LAKE								
92073		STILLHOUSE HOLLOW LAKE								
92074		RELTION LAKE								
92075		SOMERVILLE LAKE								
92076		NAVARRO MILLS LAKE								
92077		RADMELL LAKE								
92078		CANYON LAKE								
92079		NAVARRO MILLS LAKE								
92080		RADMELL LAKE								
92081		NAVARRO MILLS LAKE								
92082		CANYON LAKE								
92083		NAVARRO MILLS LAKE								
92084		RADMELL LAKE								
92085		NAVARRO MILLS LAKE								
92086		CANYON LAKE								
92087		NAVARRO MILLS LAKE								
92088		RADMELL LAKE								
92089		NAVARRO MILLS LAKE								
92090		CANYON LAKE								
92091		NAVARRO MILLS LAKE								
92092		RADMELL LAKE								
92093		NAVARRO MILLS LAKE								
92094		RADMELL LAKE								
92095		NAVARRO MILLS LAKE								
92096		RADMELL LAKE								
92097		NAVARRO MILLS LAKE								
92098		RADMELL LAKE								
92099		CANYON LAKE								

PROJECT DESCRIPTOR SUMMARY

18 JUL 78

PROGRAM: GENERAL
 ORGANIZATION: OCF
 OCF RANKS: 30000 THRU 50000

PROJECT CLASS	POWER CAPACITY MILLIWATTS	AVERAGE ANNUAL	
		FLOOD DAMAGES PREVENTED <u>IN \$1000</u>	RECREATION DAYS <u>IN 1000 DAYS</u>
FC		19743.4	74.0
FI		7546.8	
FP		692984.4	114915.6
FS		262.4	
HP	7466275.0	87453.6	131503.8
HC		-	5315.8
NL		4385.1	59681.7
TOTALS	7466275.0	812375.7	311490.9

PROJECT COSTS BY FEATURE/SUBFEATURE
(TAPE OUTPUT)

1. General specifications:
 - a. Output on 7 channel 556 BPI tape
 - b. Record length = 80 characters
 - c. Blocking Mode: Binary coded decimal (BCD)
 - d. Blocking factor = 19
 - e. Label omitted from tape

2. Format specifications:

<u>FIELD NAME</u>	<u>RECORD POSITIONS</u>	<u>FIELD SIZE</u>	<u>REMARKS</u>
EROC	1 - 2	2	
(Blank)	3	1	
CLASS	4 - 5	2	
PROJECT NUMBER	6 - 10	5	
RECORD TYPE	11	1	
(Blank)	12	1	
FEATURE CODE	13 - 14	2	"TC" for "BUDGET AUTHORITY" "CR" for "CREDITS"
SUBFEATURE	15	1	Use "A" for sub-feature "10"
(Blank)	16 - 17	2	
AMOUNT	18 - 24	7	(See notes below)
(Blank)	25 - 80	56	

3. Comments regarding "AMOUNT" field:

- a. The assumed decimal point is between record positions 23 and 24.
- b. The "minus" sign is recorded in the low-order position for negative amounts, i.e., in record position 24.
- c. AMOUNT fields contain leading zeros.

APPENDIX D: USING "IMMEDIATE ACCESS"

	<u>Page</u>
Data Base Definition	37
Annotated Examples of SYSTEM 2000 Queries	39

ZBB/CWOM DATA BASE DEFINITION

1* PROGTYP	Program Type ("GENERAL" or "MR&T")
2* PROGDUM	Dummy - For use by DBA only
10* DIVISION	Repeating Group Designator
11* DIVNAM	Division Name
12* DIVDUM	Dummy - For use by DBA only
100* DISTRICT	Repeating Group Designator
101* DSTNAM	District Name (DP Block 3d)
102* EROCCD	EROC Code
103* DSTDUM	Dummy - For use by DBA only
110* PROJECT	Repeating Group Designator
111* CWIS	OCE CWIS Number
112* PROJNAM	Project Name (DP Block 2)
113* PROJCLS	Project Class (DP Block 3a)
114* PROJCD	Project Code (DP Block 3b)
115* STATE	State (DP Block 3c)
116* NBRPKTS	Number of Packets (DP Block 4c)
117* NAVTYP	Navigation Type Use (DP Block 9)
118* PWRCAP	Power Capacity (DP Block 12a)
119* FLDPREV	Flood Damages Prevented (DP Block 12b)
120* RECDAY	Recreation Days of Use (DP Block 12c)
121* PROJDUM	Dummy - For use by DBA only
1000* DECISION PACKAGE	Repeating Group Designator
1001* PKGTYP	Package Type (DP Block 4a)
1002* PKTNBR	Packet Number (DP Block 4b)
1003* DSTRNK	District Rank (DP Block 4d)
1004* DIVRNK	Division Rank
1005* OCERNK	OCE Rank
1006* TYPDREG	Type Dredge (DP Block 10a)
1007* SPWKCD	Special Work Code (DP Block 10b)
1008* DOLSDP	\$<K>, This DP (DP Block 13a)
1009* TOTDREG	Total Dredging, <K>CY (DP Block 13b)
1010* NEWWORK	\$<K> Amount, New Work (DP Block 13c)
1011* WGINCR	\$<K> Increase to W.B. Raise (DP Block 13d)
1012* OTHINCR	\$<K> Increase, Other Causes (DP Block 13e)
1013* MPCOST	\$<K> Master Plan Cost (DP Block 13f)
1014* DPDUM	Dummy - For use by DBA only
1100* DP QUALIFIERS	Repeating Group Designator
1101* STDYFLG	Line letter of C&O Study (DP Blocks 10c-f)
1200* QUALITATIVE OUTPUTS	Repeating Group Designator
1201* QUALCD	Qual. Output Line letter (DP Block 11)
1202* QUALVAL	Qual. Output Value - C,I,S, or R (DP Block 11)
1300* NUMERICAL OUTPUTS	Repeating Group Designator
1301* NUMCD	Num. Output Line letter (DP Block 14)
1302* NUMVAL	Num. Output Value (DP Block 14)

1400*	FEATURE COSTS	Repeating Group Designator
1401*	FCCD	Feature Cost Line No. (DP Block 15)
1402*	CNTRCTS	\$<K> Contracts (DP Block 15, Col. a)
1403*	MATLSUP	\$<K> Material and Supplies (DP Block 15, Col. b)
1404*	GOVCOST	\$<K> Government (DP Block 15, Col. c)
1405*	TOTCOST	\$<K> Total Cost (DP Block 15, Col. d)
1500*	MANPOWER	Repeating Group Designator
1501*	MPCODE	Manpower Line No. (DP Block 16)
1502*	NONDSTR	Non-District Man-years (DP Block 16, Col. a)
1503*	DSTIND	District, Indirect MY (DP Block 16, Col. b)
1504*	DSTDIR	District, Direct MY (DP Block 16, Col. c)

NSRDC 6600 INTERCOM V 4.6
DATE 08/22/78
TIME 15.09.04.
LOGIN,PUADZBBDP,C,SUP
~~XXXXXXXXXX~~ ENTER ACCESS NUMBER-
COMMAND- ATTACH,PROCFIL,ZBB80PROCFIL.ID=PUAD
PF CYCLE NO. - 048
COMMAND- BEGIN,S2K
08/22/78 15.11.22. BEGIN SYSTEM 2000 VERSION 2.60D

USER,ZBBREP:

ECHO OFF:
-556- ASSIGNED ZBB

\TALLY C114:

ELEMENT- PROJCD

FREQUENCY VALUE

6	A
33	B
124	C
675	D

4 UNIQUE VALUES

838 OCCURRENCES

\TALLY/ALL/C114:

ELEMENT- PROJCD

MINIMUM- A

MAXIMUM- D

4 UNIQUE VALUES

838 OCCURRENCES

\TALLY/ALL/STATE:

ELEMENT- STATE

MINIMUM- AK

MAXIMUM- WV

48 UNIQUE VALUES

838 OCCURRENCES

NOTE: Operator input is underlined
in these examples.

*The "default" setting for the
"TALLY" command is "TALLY/EACH/"
which gives the frequency of each
unique value for the element
requested. Exercise caution when
using the "TALLY" command since the
number of unique values is often
excessively long.

*It is recommended that one use the
"TALLY/ALL/" command, which format
is shown here, to first determine
the number of unique values for a
particular element.

*This is a case where there are
many unique values for a data
element. In such cases, one may
route the output to Local Files
for later routing to a high speed
printer. This process is shown
below.

```

\REPORT FILE IS EXAMPL;
---
\TALLY/EACH/STATE;
---
\REPORT FILE IS OUTPUT;
---
\PRINT C1005,C1008 WHERE
---
\C101 EQ POD AND C1001 EQ W:
    1005*    7185
    1008*     67.0
    1005*    7190
    1008*   1000.0
    1005*    9060
    1008*     6.0
    1005*    9075
    1008*   200.0
---
\PRINT OCERNK,DOLSDP WHERE
---
\dstnam EQ POD AND PKCTYP EQ W:
    1005*    7185
    1008*     67.0
    1005*    7190
    1008*   1000.0
    1005*    9060
    1008*     6.0
    1005*    9075
    1008*   200.0
---
\PRINT/NAME/OCERNK,DOLSDP,
---
\OB DOLSDP WH SAME:
    OCERNK*    9060
    DOLSDP*     6.0
    OCERNK*    7185
    DOLSDP*     67.0
    OCERNK*    9075
    DOLSDP*   200.0
    OCERNK*    7190
    DOLSDP*  1000.0
---
\PRINT COUNT DOLSDP,MAX DOLSDP,
---
\MIN DOLSDP,SUM DOLSDP,SIGMA DOLSDP,
---
\AVG DOLSDP WH PROCTYP EQ MR&T:
CNT DOLSDP* 132
MAX DOLSDP* 5488.0
MIN DOLSDP* 1.0
SUM DOLSDP* 81969.000
SIG DOLSDP* 1016.794
AVG DOLSDP* 620.977
---

```

*Routes output to Local Files and names file "EXAMPL".
 *See output on last page of this appendix.
 *Returns output routing back to the interactive terminal.
 *Example of a simple "PRINT" command with a qualifying "WHERE" clause.

*Same example as above except that element names are used in the request instead of element numbers.

*Example of specifying the "NAME" output format option and of using an "OB" (Ordered By) clause for the same case as above.

*Example shows use of "built-in" system functions to analyze the "DOLSDP" (Dollars per DP) element for the MR&T program.

\PRINT CI000 WH OCERNK EQ 3060:

PKGTYP*	W
PKTNBR*	30
DSTRNK*	20
DIVRNK*	1056
OCERNK*	3060
SPWKCD*	OS
DOLSDP*	15.0
FCCD*	35BA
CNTRCTS*	0.0
MATLSUP*	5.0
GOVCOST*	10.0
TOTCOST*	15.0
FCCD*	35GT
CNTRCTS*	0.0
MATLSUP*	5.0
GOVCOST*	10.0
TOTCOST*	15.0
FCCD*	35ST
CNTRCTS*	0.0
MATLSUP*	5.0
GOVCOST*	10.0
TOTCOST*	15.0
FCCD*	35
CNTRCTS*	0.0
MATLSUP*	0.0
GOVCOST*	1.0
TOTCOST*	1.0
FCCD*	34
CNTRCTS*	0.0
MATLSUP*	0.0
GOVCOST*	1.0
TOTCOST*	1.0
FCCD*	21
CNTRCTS*	0.0
MATLSUP*	5.0
GOVCOST*	8.0
TOTCOST*	13.0
MPCODE*	01
NONDSTR*	0.0
DSTIND*	0.0
DSTDIR*	0.4

\PRINT/GROUP/CI000 WH SAME:

PKGTYP*	W
PKTNBR*	30
DSTRNK*	20
DIVRNK*	1056
OCERNK*	3060
SPWKCD*	OS
DOLSDP*	15.0

*This example shows that when a repeating group is printed without specifying the "GROUP" format option, every descendent of that group is also printed out. The command "PRINT PROGTYP" would cause the entire data base to be printed out! Thus, one should exercise caution if the "GROUP" option is not specified.

*This shows the effect of specifying the "GROUP" option when making the same "PRINT" request as above.

```

\LIST/NAME, GROUP, REPEAT SUPPRESS,
--+
\TITLE D(15)EXAMPLE OF USING LIST PROCEDURE,
--+
\f(15) END OF LIST EXAMPLE,L(4)FCCD,
--+
\r(10)CONTRACTS+($1000) ,
--+
\r(11)MATL & SPLY+($1000) ,
--+
\r(10)GOVERNMENT+($1000) ,
--+
\r(10)TOTAL COST+($1000) /
--+
\c1401,c1402,c1403,c1404,c1405,ob FCCD WH
--+
\PROGTYP EQ GENERAL AND OCERNK EQ 3060:

```

*This example illustrates how the "LIST" command can be used to arrange output in a more readable format.

EXAMPLE OF USING LIST PROCEDURE
08/22/78

1

FCCD	CONTRACTS (\$1000)	MATL & SPLY (\$1000)	GOVERNMENT (\$1000)	TOTAL COST (\$1000)

* 21	0.0	5.0	8.0	13.0
* 34	0.0	0.0	1.0	1.0
* 35	0.0	0.0	1.0	1.0
* 35BA	0.0	5.0	10.0	15.0
* .35GT	0.0	5.0	10.0	15.0
* 35ST	0.0	5.0	10.0	15.0

END OF LIST EXAMPLE

```

--+
\EXIT:
-506- CLOSED ZBB
08/22/78 15.25.49. END SYSTEM 2000 VERSION 2.60D
COMMAND- FILES
--LOCAL FILES--
*PROCFIL EXAMPL
COMMAND- ROUTE,EXAMPL,DC=PR,TID=YX,FID=EXAMP
COPYING Q FILE
COMMAND- LOGOUT
CPA 31.174 SEC
SS 50.254 SEC
EST. SYSTEM COST $ 9.26
EST. CONNECT COST $ 0.75
CONNECT TIME 0 HRS. 18 MIN.
08/22/78 LOGGED OUT AT 15.27.06.
<

```

*Routes Local File "EXAMPL" to high-speed printout terminal located at "YX" (CERL).

\$\$\$\$\$\$\$\$	SS	SS	SS	S	S	\$\$\$\$\$\$\$	\$\$\$\$\$	\$\$\$\$\$
SS	SS	SS	SSSS	SS	SS	SS	SS	SS
SS	SSSS	SS	SS	SSS	SS	SS	SS	SS
SSSS	SS	SS	SS	SSSSSS	SS	SS	SS	SS
SS	SSSS	SS	SS	SS	SS	SS	SS	SS
SS	SS	SS	SSSSSS	SS	SS	SS	SS	SS
SS	SS	SS	SS	SS	SS	SS	SS	SS
SS	SS	SS	SS	SS	SS	SS	SS	SS
SS	SS	SS	SS	SS	SS	SS	SS	SS
SSSSSS	SS	SS	SS	SS	SS	SS	SS	SS

***** ELEMENT- STATE *****

FREQUENCY VALUE

8	AK
18	AL
27	AR
3	AZ
50	CA
5	CO
14	CT
3	DC
10	DE
38	FL
14	GA
3	HI
9	IA
6	ID
19	IL
14	IN
14	KS
22	KY
36	LA
18	MA
11	MD
1	ME
63	MI
15	MN
12	MO
27	MS
2	MT
14	NC
5	ND
5	NE
7	NH
11	NJ
9	NM
2	NV
36	NY
28	OH
26	OK
35	OR
36	PA
9	SC
7	SD
11	TN
44	TX
19	VA
5	VT
31	WA
23	WI
13	WV

48 UNIQUE VALUES

838 OCCURRENCES

*This is the output that resulted from the command "TALLY/EACH/STATE". On the preceding page the output was routed to CERL and was printed on CERL's high speed printer.

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Deponai, John M. III

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